BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
The Establishment of Policies	)	IB Docket No. 99-81
and Service Rules for the Mobile	)	RM-9328
Satellite Service in the 2 GHz Band	)	

To: The Commission

REPLY COMMENTS OF IRIDIUM LLC

IRIDIUM LLC

Thomas J. Keller
Eric T. Werner
VERNER, LIIPFERT, BERNHARD,
MCPHERSON, AND HAND, CHARTERED
901 - 15th Street, N.W.
Suite 700
Washington, D.C. 20005-2301
(202) 371-6000

Counsel to Iridium LLC

Patricia A. Mahoney
Assistant General Counsel,
Regulatory and Trade Policy
Audrey L. Allison
Counsel, Regulatory Matters
IRIDIUM LLC
1575 Eye Street, N.W. - 8th Floor
Washington, D.C. 20005
(202) 408-3800

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SUMMARY

Herein, Iridium LLC (AIridium≅) replies to the comments submitted in the above-captioned proceeding. Iridium=s Comments set forth a number of recommendations intended to assist the Commission in developing a licensing and regulatory framework that best serves the public interest by facilitating the rapid deployment of competitive, technologically-advanced new mobile satellite services. Specifically, Iridium urged the Commission to adopt the Traditional Band Plan approach for licensing 2 GHz MSS systems. Iridium also urged the Commission to explore making additional global MSS spectrum available in the U.S. and to work with officials in other administrations around the world to ensure that U.S. MSS licensees will have access to sufficient spectrum in other countries to enable them to implement their systems.

The comments filed by the parties with the greatest interest in this proceeding B the applicants B largely support many if not most of the views expressed by Iridium in its Comments. All applicants appear willing to be flexible with their proposals so that the Commission may assign spectrum to all qualified applicants, thus avoiding mutual exclusivity. With respect to the specific technical solutions or licensing approaches proposed by the Commission, a clear majority of applicants indicate a level of support for the Traditional Band Plan, or a variation thereof, either as their primary choice or as an acceptable alternative. It is also clear that the Flexible Band Plan approach is unsuitable as a template for other administrations to follow in developing their own licensing procedures and, thus, is not an acceptable approach for the Commission to adopt in this proceeding. While Iridium commends Globalstar for its creativity in developing a wholly-new licensing proposal, the AAll Shared Band Plan,≅ Iridium

believes that this proposal=s reliance on complex and unproven sharing arrangements requiring significant changes in system design for some applicants, and at least one Letter of Intent filer with a system under construction, makes it too impractical to implement effectively. Finally, the weight of the comments clearly and unequivocally favor rejection of the Negotiated Entry and Competitive Bidding approaches.

Most of the U.S. applicants B including Boeing, Globalstar, MCHI, and Constellation B all join Iridium in urging the Commission to take steps to address the problems of U.S. licensees= access to global spectrum in the U.S. and elsewhere. Several of these commenters identify concrete steps that the Commission could take to begin to address these problems, and Iridium generally supports their proposals.

The comments of other applicants generally also reflect support of many of the positions Iridium took relative to the Commission=s 2 GHz MSS service rules proposals. The applicants collectively support the proposal to treat 2 GHz MSS space segment licensees as non-common carriers. While the commenters support the continued use of blanket licensing for space systems, most applicants B like Iridium B urge the Commission to adopt a longer license term (perhaps as long as twenty years) and a renewal expectancy for licensees. Such measures are appropriate in recognition of the substantial levels of investment that are necessary in order to design, construct, launch, and operate state-of-the-art mobile satellite systems.

Iridium agrees with the majority of applicants in opposing the imposition of enhanced 9-1-1 (AE911") requirements. The MSS industry is still in its infancy. It has not yet developed into a commercial mobile public telephone service like cellular or PCS. Thus, it is premature to impose E911 and specific position location requirements

on this service, particularly on the global systems, which will face multiple and possibly conflicting requirements in the absence of international standards.

Iridium also agrees with applicants that urge the Commission to adopt and enforce strict implementation milestones to ensure that proposals are effectuated.

Herein Iridium also addresses other issues discussed in the comments, such as service to unserved and underserved areas and feeder link issues, including protection of radio astronomy.

Finally, the weight of the comments also supports Iridium=s position that the Commission should not accommodate AMS(R)S in the 2 GHz MSS band. As NTIA states, no need exists for the service, and the majority of commenters concur that the proposal is inconsistent with the purposes for which the 2 GHz band was allocated for MSS use.

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Iridium LLC (AIridium≅), by its attorneys and pursuant to Section 1.415(c) of the rules of the Federal Communications Commission (AFCC≅ or ACommission≅), 47 C.F.R. э 1.415 (c) (1998), hereby respectfully submits its Reply Comments in response to the comments filed by several parties[1/] concerning issues raised in the Commission=s Notice of Proposed Rulemaking in the above-captioned proceeding (ANotice≅).[1/]

1. INTRODUCTION

1/ Iridium does not herein respond to all comments by all participants. The absence of a response to a given party or comment is not intended, and should not be interpreted, to indicate support for that party or comment.

2/ *In the Matter of The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, FCC 99-50, released March 25, 1999 (*Notice of Proposed Rulemaking* in IB Docket No. 99-81, RM-9328) (ANotice≅). A summary of the Notice appeared in the Federal Register on April 7, 1999. 64 FED. REG. 16880 (April 7, 1999).

In its Comments, Iridium observed that the Commission faces a number of substantial, unprecedented challenges in this proceeding: assigning what is currently the only available global mobile-satellite service (AMSS≅) spectrum (at least for entities seeking a U.S. space station license);[1/] assigning MSS spectrum to satellite systems of diverse technical designs (geostationary ("GSO") and non-geostationary ("NGSO"), global and regional); crafting service rules that do not disadvantage new systems vis-a-vis already-licensed systems; crafting service rules that do not disadvantage U.S.-licensed systems vis-a-vis their non-U.S.-licensed (and apparently even un-licensed) competitors; crafting technical rules that will be applicable to all licensees when their systems have very different technical designs; assigning spectrum in a way that will enable and hopefully ensure a robust, competitive MSS marketplace in the U.S. and globally; assigning spectrum for the global systems in a way that a U.S. band plan can be accepted around the world;

3/ Iridium also pointed out that there is unused MSS spectrum in the L Band, but the Commission has frozen U.S. applications for that spectrum. *Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band*, 11 FCC Rcd 11675 (1996) (*Notice of Proposed Rule Making* in IB Docket No. 96-132) (A*L Band NPRM*≅). Iridium recently filed a Motion to Refresh the Record in that proceeding in which it asked the Commission to reopen the record to seek additional comments on matters at issue in that proceeding. Motion to Refresh the Record, filed April 15, 1999, by Iridium LLC and Motorola, Inc., in IB Docket No. 96-132.

and ensuring that what the Commission does in this proceeding is consistent with decisions on relocation of incumbents in the 2 GHz allocation proceeding, ET Docket 95-18.[1/]

4/ *See*, *e.g.*, *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service*, FCC 98-309, released November 25, 1998 (*Memorandum Opinion and Order and Third Notice of Proposed Rule Making and Order* in ET Docket No. 95-18).

Iridium offered comments on a number of the issues raised by the Commission in the Notice, including the various proposed approaches to licensing and the proposed service rules for 2 GHz MSS. The Notice attracted numerous other comments B not just from the nine applicants and letter of intent filers (ALOI Filers≅) but also from other interested parties. Generally, the commenting parties fall within four groups: the applicants and LOI filers;[1/] entities with technical concerns at issue in the proceeding; entities with policy concerns raised by issues in the proceeding; and entities with economic interests in the outcome of this proceeding.[1/]

With respect to the comments of the entities that have the most at stake in this proceeding, the applicants, it is clear that most share the concerns and positions Iridium has expressed. It is also clear that all are willing to be flexible with their proposals so that the Commission may authorize all qualified applicants, thus avoiding mutual exclusivity and any consideration of a competitive bidding process.

As Iridium predicted in its Comments, when the Commission considers all relevant issues and comments in light of the challenges it faces, it will reach the conclusion Iridium has reached -- that the Traditional Band Approach is the processing approach that enjoys the greatest support

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5/ Six entities B The Boeing Company (ABoeing≅); Celsat America, Inc. (ACelsat); Constellation Communications, Inc., (AConstellation≅); Globalstar, L.P. (AGlobalstar≅); Iridium; and Mobile Communications Holdings, Inc. (AMCHI≅) B have each applied for licenses from the Commission to operate MSS systems in the portion of the 2 GHz band allocated by the Commission for such use. In addition, three non-U.S. licensed system operators B ICO Services Limited (AICO≅); Inmarsat Ltd. (AInmarsat≅); and TMI Communications and Company, Limited Partnership (ATMI≅) B have filed Aletters of intent≅ seeking authority to serve the United States with their systems. Unless otherwise specifically noted to the contrary in text, the word Aapplicant≅ as used hereinafter shall refer collectively to both of these groups.

6/ One such entity has submitted at least three separate filings through its subsidiaries and affiliates.

from the applicants and best serves the public interest, allowing the Commission to grant the applications of all qualified systems in a way that can be implemented globally.

Once again, however, adoption of the Traditional Band Plan or any of the proposed approaches will not resolve the issue of how the entities that receive their space segment licenses from the U.S. under any of the options will be able to access 2 GHz spectrum in Europe or in countries outside Europe where one of the LOI filers in this proceeding has already locked up all available 2 GHz global MSS spectrum. In the absence of a plan to work with other countries to harmonize 2 GHz assignments, it appears unlikely that U.S. licensees will be able to obtain outside the U.S. the spectrum that the U.S. assigns. As Iridium has previously urged, the Commission must work with Europe and it must look beyond the instant proceeding and the 2 GHz bands and consider other MSS spectrum, particularly the spectrum at issue in IB Docket No. 96-132, to accommodate all applicants and ensure a fair and competitive environment (in the U.S. and globally) in which like MSS systems have access to like amounts of spectrum between 1 and 3 GHz.

2. THE MOST EFFECTIVE APPROACH FOR LICENSING 2 GHz MSS

1. The Basic Objectives and Concerns

In its initial Comments in this proceeding, Iridium identified the four critical objectives that the Commission=s 2 GHz MSS band plan must satisfy. They are:

(1) the creation of a pro-competitive regulatory environment;

(2) assurance of an open telecommunications marketplace consistent with the World Trade Organization (AWTO≅) Agreement on Basic Telecommunications;

(3) a fair and equitable opportunity for all 2 GHz MSS service providers (both foreign and domestic) to provide services; and

(4) a band assignment plan that can be implemented around the world.[1/]

7/ Iridium Comments at 11.

To achieve these critical objectives, Iridium urged, the Commission must ensure that its licensing scheme and service rules for 2 GHz MSS do not advantage one applicant at the expense of others, can be easily understood and followed by licensees, and can be easily and practically coordinated outside the U.S.[1/] Also, Iridium submitted, the Commission must acknowledge the unintended marketplace impact that its regulations can precipitate by affecting the amount of spectrum to which each licensee has access and the timing of that access.[1/] Next, Iridium noted that the Commission=s licensing scheme must acknowledge and address the unique challenges presented by the need to relocate disparate groups of incumbent licensees in other services that presently occupy the 2 GHz MSS band.[1/] Finally, Iridium again emphasized the need for the Commission to address the discrepancy that exists between the U.S. MSS spectrum licensing process and processes taking place in other countries and to adopt a licensing framework that will facilitate U.S. licensees= ability to access the spectrum necessary to provide ubiquitous services on a global basis.[1/]

A review of the comments filed by the 2 GHz MSS applicants in this proceeding reveals that Iridium=s concerns and observations are shared by others. Boeing, for example, agrees that

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8/ *Id.* at 12.

9/ Iridium specifically observed that a failure on the part of the Commission in this regard could very likely produce unintended and material market distortions carrying potentially long-term consequences for the competitive landscape for the U.S. and global MSS industries. *Id.*

10/ *Id.*

11/ *Id.* at 13-14.

the Commission should promote a band plan that is internationally compatible.[1/] Indeed, Boeing echoes Iridium=s Comments when it states that:

> [t]he Commission should promote an internationally coordinated band sharing approach . . . that aligns spectrum use on a global basis as much as possible. Additionally, the Commission should work to ensure that 2 GHz licensees have spectrum assignments that are comparable in size in every region where they provide services.

12/ *See* Comments of The Boeing Company, filed June 24, 1999, at 34-35 (ABoeing Comments≅).

> Without such a concerted effort, 2 GHz MSS licensees may risk being excluded from operating in some foreign markets. Additionally, individual systems may be <whipsawed= in negotiations with other administrations. Such an outcome would seriously disadvantage MSS licensees, which need to be able to market the ubiquitous availability of their services.[1/]

Globalstar, too, emphasizes spectrum access as one of its principal concerns. Among the three priorities that it believes the Commission=s band plan must address, Globalstar first

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13/ *Id.* at 35. Boeing also observes that:

> [p]ursuing an internationally compatible band plan for the 2 GHz MSS service is particularly important because, as the Commission acknowledges in the NPRM, this is the FCC=s first satellite processing round in which non-U.S. licensed systems have been permitted to participate using letters of intent . . . . [S]everal applicants may have already begun coordination with the support of foreign administrations. These applicants will be under no obligation to cooperate with the development of an internationally compatible band plan unless the Commission makes such cooperation a condition of their U.S. operating authority.

Id. at 34.

identifies the need to ensure that each system is provided with sufficient spectrum to effectuate its business plan.[1/] Iridium agrees with Globalstar on this point.

As Iridium demonstrated in its Comments and discusses further below, the Traditional Band Plan approach is the one approach that best satisfies the objectives that should govern assignment of spectrum in this proceeding and the concerns raised by the applicants.

2. International Considerations and Coordination

14/ Comments of Globalstar, L.P., filed June 24, 1999, at 9 (AGlobalstar Comments≅).

All of the applicants support the Commission=s proposal to use engineering solutions, such as an appropriate band plan framework, to avoid mutual exclusivity among the applicants for 2 GHz MSS spectrum. Although, as discussed more fully below, commenters differ on the specific nature of the band plan and other engineering solutions that the Commission should employ, all appear to agree that the Commission possesses the necessary tools to ensure that all 2 GHz MSS applicants will have access to the available spectrum in the U.S.[1/] Accordingly, there is no need or legal basis for the Commission to utilize competitive bidding to award 2 GHz MSS licenses.

15/ See, e.g., Globalstar Comments at 13; Comments of ICO Services Limited, filed June 24, 1999, at 4, 12 (AICO Comments≅); Comments filed June 24, 1999, by Constellation Communications, Inc., at 2, 6-7 (AConstellation Comments≅); Comments of Mobile Communications Holdings, Inc., filed June 24, 1999, at 17 & n.44 (AMCHI Comments≅). *See also* Comments of Celsat America, Inc., filed June 24, 1999, at 17-20 (ACelsat Comments≅).

However, although the Commission can technically grant all of the present applicants= proposals,[1/] with some modifications, there still remain issues concerning particular segments of the 2 GHz band currently allocated for MSS service in the U.S., relative to the number of proposed MSS systems designed to provide global service, that may make it difficult for the Commission to award sufficient spectrum to enable these applicants actually to provide their services on a global basis. [1/] Moreover, as Iridium discussed in its Comments, there appear to be significant obstacles outside the U.S. that will affect the ability of a U.S.-licensed system to obtain access to spectrum outside the U.S. The emergence of healthy and robust competition in global

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16/ Iridium did not address in its Comments, and does not address herein, the specific issues relative to the qualifications of Inmarsat, ICO, MCHI, and Constellation that may affect the grantability of their respective applications, because these matters are already separately pending before the Commission. Iridium=s comments concerning the rules and policies to be adopted in this proceeding to govern the licensing and operations of 2 GHz MSS systems are made without prejudice to Iridium=s arguments relative to the pending applications.

mobile satellite services will depend on the ability of U.S.-licensed systems to secure access to adequate spectrum in the U.S. as well as to spectrum allocated for MSS in other countries. For this reason, Iridium agrees with Globalstar that the Commission should consider modifying its proposed policies for the lower L-band to allow applicants for 2 GHz MSS spectrum to use that spectrum, thereby increasing the total amount of spectrum available to the nine applicants.[1/]

17/ *See* Iridium Comments at 13-14.

18/ Globalstar Comments at 9 n.10. Indeed, Iridium alluded to this problem and advanced a similar suggestion at the outset of its Comments, urging the Commission to Awork with Europe and . . . [to] look beyond the instant proceeding and the 2 GHz bands and consider other MSS spectrum, particularly the spectrum at issue in IB Docket No. 96-132, to accommodate all applicants and ensure a fair and competitive environment in which like MSS systems have access to like amounts of spectrum between 1 and 3 GHz.≅ Iridium Comments at 3. As Iridium noted, it has recently filed a Motion to Refresh the Record in Lower L-band proceeding in which it asked the Commission to reopen the record to seek additional comments on matters at issue therein. *Id.* at 2 n.2 (citing Motion to Refresh the Record, filed April 15, 1999, by Iridium LLC and Motorola, Inc., in IB Docket No. 96-132).

In its Comments, Iridium reiterated a request to the Commission that has been a core concern of Iridium=s from the very inception of this licensing process: the need for the Commission to work with European regulators and other Administrations to address how U.S.-licensed 2 GHz MSS operators will obtain access to European 2 GHz MSS spectrum in a timely fashion (and to global MSS spectrum generally), as well as the inconsistencies in global MSS spectrum allocations and scarcity of MSS uplink spectrum that aggravate this access problem.[1/] Iridium has been and remains concerned that, unless the U.S. takes aggressive steps to address these problems, U.S. 2 GHz MSS operators licensed in this proceeding will find themselves frozen out of Europe (and other countries) and unable to provide global services until 2005 at the earliest.

Virtually all of the U.S. applicants proposing global systems in this proceeding voiced an identical desire for action by the Commission.[1/] Globalstar summed up the point, stating:

> [T]he Commission should take whatever steps are necessary in this proceeding and in the international coordination process to ensure that U.S. licensed systems are not penalized as a result of the difference between the [European and U.S.] band plans, and receive access to the same opportunities to provide service in Europe as European systems obtain in the United States.[1/]

As Iridium=s Comments observed, the Notice made few concrete proposals concerning what the Commission was prepared to do to address these issues. In the absence of any specific proposals from the Commission, Iridium generally supports many of the proposals for action

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19/ Iridium Comments at 48-51.

20/ Boeing Comments at 34-35, Constellation Comments at 22-23, Globalstar Comments at 47-48, MCHI Comments at 19-22.

21/ Globalstar Comments at 48.

suggested by MCHI in its comments.[1/] As MCHI indicates, the importance of harmonizing the global regulation of technical characteristics and global and regional 2 GHz MSS spectrum cannot be overemphasized.

22/ MCHI Comments at 19-22.

In particular, Iridium agrees with MCHI that the Commission should affirmatively engage foreign administrations concerning their domestic 2 GHz MSS satellite system licensing procedures in order to achieve compatibility with the band plan and technical requirements to be adopted in this proceeding. Iridium also agrees that the Commission should work with the Executive Branch to use World Trade Organization (AWTO≅) and General Agreement on Trade in Services (AGATS≅) enforcement mechanisms to ensure that foreign administrations provide access. The Executive Branch should use all diplomatic and enforcement tools at its disposal to obtain access for U.S. licensees to European 2 GHz MSS spectrum as soon as possible. Finally, the Commission should ascertain immediately the availability of the 2 GHz MSS bands to U.S.-licensed MSS systems in countries other than the U.S.[1/]

3. The Comments Support A Traditional Band Plan Approach

23/ There is reason to be concerned that much of the 2 GHz spectrum allocated for MSS around the world is already being assigned to the exclusion of U.S. applicants. For example, Japan has reportedly already assigned or at least reserved the entire 60 MHz of spectrum allocated for 2 GHz MSS to ICO. *See Japan Pinpoints Priorities for WRC 2000 -- Spectrum for Mobile Phone Service Tops List*, Space News, March 22, 1999, at 4.

In its Comments, Iridium urged the Commission to adopt a Traditional Band Plan approach for assigning 2 GHz MSS spectrum to the U.S. applicants now seeking space segment licenses from the Commission and the non-U.S. licensed systems seeking authority to serve the United States. Seven of the nine 2 GHz MSS applicants expressed support for the Traditional Band Plan approach, or some variant of it, either as their preferred approach[1/] or as an acceptable alternative in the event the Commission failed to adopt their primary choice.[1/] Given the level of support, and for the reasons stated by Iridium in its Comments and in these Reply Comments, the Commission should adopt a Traditional Band Plan with appropriate modifications to afford greater flexibility, particularly in the recovery and reassignment of spectrum ultimately forfeited by 2 GHz MSS licensees that fail to satisfy their milestone obligations.

1. *Traditional Band Plan*

In advocating the Traditional Band Plan approach, Iridium observed that the methodology provides licensees with the certainty of access to spectrum necessary to encourage investment, simplifies the coordination process, and avoids the perils associated with the Negotiated Entry and Flexible Band approaches, described below. Moreover, Iridium observed, the Traditional Band approach Ais easily understood, easily duplicated, easily implemented, and easily coordinated outside the U.S.≅[1/] Boeing and Constellation each identify similar advantages in the Traditional Band framework. For example, Boeing notes that the Traditional Band approach

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24/ *See* Iridium Comments at 21-22, Boeing Comments at 21, Constellation Comments at 7, 19.

25/ *See* Celsat Comments at 12, Globalstar Comments at 20, MCHI Comments at 10, Comments of TMI Communications and Company, Limited Partnership, filed June 24, 1999, at 7 (ATMI Comments≅).

26/ Iridium Comments at 22.

will accommodate each of the applicants, including both GSO and non-geostationary (ANGSO≅) constellations, along with TDMA and CDMA-based networks. Use of a traditional approach would also greatly facilitate international spectrum coordination by giving U.S. licensees a model that can be pursued in other countries. Furthermore, implementation of a traditional approach could take place in concert with any terrestrial relocation that is required by the Commission.[1/]

27/ Boeing Comments at 21.

Some commenters have criticized the Traditional Band Plan as inferior because of its perceived inflexibility and the risk that it would allow valuable spectrum to lie fallow for a greater period of time if all licensed systems are not ultimately implemented, thus delaying expansion opportunities.[1/] However, such perceived risks are minor and are outweighed by the more significant advantages of the Traditional Band Plan approach.

The Traditional Band Plan approach affords each applicant guaranteed access to a greater amount of spectrum (7.50 MHz or 3.75 MHz x2) at the outset, thereby extending the time before which any individual licensee is likely to require additional spectrum. Moreover, as Iridium noted in its Comments, the Traditional Band Plan approach could carry with it some degree of flexibility relative to expansion spectrum. Specifically, Iridium recommended that, in the event an authorized 2 GHz MSS service provider ultimately proved unable to meet its milestones, its spectrum should automatically revert back to the designated band for the system in question.[1/]

Iridium believes that this approach effectively addresses many of the concerns expressed by the critics of the Traditional Band Plan and possesses the virtue of preserving the Commission=s flexibility, in the event of such a forfeiture of spectrum, to determine how best to reassign spectrum in light of policies then in place. Iridium has no objection to the proposed modifications to the Traditional Band Plan suggested by Constellation or Globalstar to enhance

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28/ *See, e.g.*, Celsat Comments at 12, Inmarsat Comments at 11, MCHI Comments at 10-11, TMI Comments at 6.

29/ Iridium Comments at 15-16.

the potential for licensees using similar signal coding protocols to aggregate and share spectrum under the Traditional Band Plan approach.

2. *Flexible Band Plan*

The second most popular proposal, according to the weight of the comments, is the Flexible Band Plan approach. Four of the commenting applicants B Celsat, MCHI, Inmarsat, and TMI -- express a primary preference for this approach or some variation of it.[1/] Generally, each contends that the Flexible Band Plan approach most effectively balances the competing concerns of providing applicants with access to spectrum, preventing spectrum from lying fallow, and affording opportunities for licensees to obtain expansion spectrum as their systems grow.

The key advantage of the Flexible Band Plan approach, according to its proponents, is its asserted ability to respond relatively quickly to changing circumstances to adjust spectrum use as necessary, for example, by awarding expansion spectrum or, under the Inmarsat plan, perhaps taking away unused spectrum from an operator. Celsat concedes that the approach gives applicants Aconsiderably less spectrum≅ than they otherwise seek but holds the promise of eventual expansion spectrum.[1/] Proponents of the Flexible Band Plan also emphasize, as an advantage of the approach, the asserted ability to Aguarantee≅ licensees access to spectrum while

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30/ *See generally* Celsat Comments at 6-12, MCHI Comments at 3-9, Inmarsat Comments at 2-10, and TMI Comments at 5-6, 7. Inmarsat and MCHI advocate modified versions of the Flexible Band approach, incorporating changes that they assert makes the approach even more able to respond quickly to changes in the market.

31/ Celsat Comments at 7. Celsat concedes that its proposal would give each system proponent Athe absolute minimum amount of spectrum necessary to secure financing and get into operation, while reserving the remaining spectrum only for those services that are actually carrying customer traffic.≅ *Id.* at 8. In addition, Celsat recommends that the Commission adopt a Aself-executing≅ mechanism for awarding spectrum out of the expansion segments of the band commencing between three and four years after all 2 GHz MSS systems are licensed. *Id.* at 9.

also assuring that the spectrum will not lie fallow until the licensee is prepared to commence operations.[1/]

As noted in its Comments, Iridium recognizes the potential advantages of the Flexible Approach. However, Iridium believes that the characteristics identified by the commenting parties as the chief advantages of the Flexible Band Plan approach may, in fact, be its principal shortcomings.

One obvious shortcoming is that the Flexible Band Plan approach fails to satisfy one of the basic objectives discussed above: it does not produce a template band plan that can be easily implemented around the world. The very flexibility of the band plan, and the uncertainty surrounding the criteria that would drive expansion band assignment decisions, would make it very difficult if not impossible to harmonize U.S. assignments with those made by other administrations around the world. Foreign administrations considering spectrum access requests from U.S. licensees would naturally be uncertain whether the 5 MHz of spectrum sought by a U.S. applicant represents the totality of spectrum that the applicant would ultimately need or merely represents a baseline subject to upward fluctuation as the FCC makes future expansion spectrum decisions based on potentially parochial U.S. policy objectives.

Moreover, there is no reason to believe or expect that a foreign administration would be persuaded to award a U.S. licensee an additional 2.50 MHz of spectrum in its country simply to Aharmonize≅ its allocation with an expansion band decision based, for example, on the licensee=s

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32/ This would be accomplished by affording earlier entrants the ability to use other licensees= Aguaranteed≅ spectrum on a secondary basis pending the latters= entry into the band.

pledge to provide service to underserved populations in the U.S. Other countries might not decide to reserve spectrum initially, or might adopt policies for allocation of the reserve that address their own national objectives and not those of the U.S. Thus, it is highly unlikely that the Flexible Band Plan approach would be acceptable in other countries.

Another obvious disadvantage is that the Flexible Band Plan approach creates uncertainty as to whether a licensee will actually be able to access its Aguaranteed≅ spectrum at the time it is needed. As Iridium observed in its Comments, the Commission=s proposal under the Flexible Band Plan approach to permit earlier entering operators to utilize a later entrant=s assigned spectrum on a secondary basis carries the same potential for mischief that makes the Negotiated Entry approach, discussed below, so undesirable. Celsat suggests that this problem may be able to be overcome by use of the special temporary authority (ASTA≅) process.[1/] This is an interesting proposal that is worthy of consideration; however, it appears that it could just as effectively be employed in the Traditional Band Plan context where licensees would have clear and unequivocal rights to their assigned spectrum and where, moreover, they would also be able to receive an additional 2.5 MHz of spectrum to support their system operations from the outset.

The proponents of the Flexible Band Plan do articulate some points that recommend the plan. However, on balance, the Traditional Band Plan approach would better serve the public interest.

3. *AAll-Shared≅ Band Approach (Globalstar Proposal)*

33/ Celsat Comments at 7.

Responding to the Commission=s invitation in the Notice for commenters to develop alternative licensing schemes,[1/] Globalstar articulates a licensing approach that represents a dramatic departure from the four licensing schemes the Commission has proposed. Specifically, Globalstar urges the Commission to adopt a licensing approach pursuant to which all proposed systems would be authorized to operate across the entire 2 GHz MSS band, sharing the spectrum through coordination.[1/] However, this approach differs substantially from the Negotiated Entry Plan. To effectuate Globalstar=s proposal, the Commission would require licensees to coordinate with one another in advance to develop basic common parameters for systems operating in the shared 2 GHz MSS spectrum.[1/]

Globalstar contends that its proposed approach is most advantageous because it would: (1) enable the Commission to license all of the proposed systems; (2) afford licensees a guarantee of access to the entire 35 MHz (x2) of spectrum, thus ensuring adequate spectrum to maximize system capabilities; (3) eliminate the risk of fallow spectrum if any licensee failed to go forward; (4) provide more flexibility to global systems to obtain spectrum assignments from other administrations; and (5) encourage rapid development and deployment of 2 GHz MSS systems to avoid the increased complexities of coordination faced by later-launched systems.[1/]

Iridium commends Globalstar for the ingenuity of its proposed AAll-Shared Band≅ approach. The proposal is forward-thinking, and its use of the latest technical advances to enhance effective spectrum management has a clear appeal. Despite the advantages of

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34/ *See* Notice, slip op. at 16 & 30.

35/ Globalstar Comments at 10, 11.

36/ *Id.* at 11.

37/ *Id.* at 11-12.

Globalstar=s proposal, however, Iridium believes that the AAll-Shared Band≅ approach simply is too impractical to work effectively in the present environment of 2 GHz MSS applications.

The principal shortcoming of the proposal is that, in order to maximize the potential for sharing, non-U.S. entities with systems already under construction would have to abandon their system designs and adopt system architectures to which all applicants would agree (assuming that were possible).[1/] For some pending LOI filers, such a redesign could not be completed without considerable expense, if it could be accomplished at all.

Moreover, Iridium has concerns about the details of the sharing arrangements that would have to be adopted and how such a shared band would work. Globalstar=s proposal depends upon assumptions regarding spectrum sharing that have not been proven. For example, no detailed studies are publicly available that demonstrate that systems employing different access technologies (*i.e.*, CDMA vs. TDMA) can share spectrum. In light of the need to complete this proceeding and license 2 GHz MSS systems expeditiously to facilitate deployment of new systems, these problems would seem to be insurmountable. Accordingly, as discussed above, the Commission should adopt the Traditional Band Plan approach.[1/]

4. *Negotiated Entry*

38/ Globalstar concedes as much. *See id.* at 12 (A[T]his plan does not necessarily permit each system to choose its own system design. . . .≅).

39/ As noted, Globalstar indicates that a Traditional Band Plan would be its next preferred alternative if the Commission determines that it is unable to adopt the AAll-Shared Band≅ approach. Globalstar Comments at 20.

The preponderance of comments in this proceeding plainly do not support any further consideration of the Negotiated Entry approach to licensing 2 GHz MSS systems. ICO is the only applicant that supports this proposed approach.[1/] By contrast, all of the other commenting applicants uniformly and firmly reject it, echoing the concerns about the same potential for anticompetitive abuses of the process that Iridium raised in its Comments.[1/]

Celsat, for instance, observes that a proposed approach that would give control of the entire band to a single party -- the first to enter -- is Arife with potentially disastrous consequences for the development of meaningful competition≅ because of the incentive it creates for the early entrant to abuse and delay the coordination process.[1/] Similarly, Globalstar observes that under such an approach Athere is very little incentive for operational systems to negotiate in good faith with newly-launched systems≅ to afford equitable spectrum access to the latter, and, in any event, Athe coordination process conducted seriatim is likely to result in a hodgepodge of assigned frequencies that would not necessarily produce the optimal use of spectrum because each system would want to retain its proposed design.≅[1/] Thus, Globalstar laments that, A[a]s with the

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40/ ICO=s proposed U.S. service providers filed separate comments, but clearly all should be considered AICO≅ for purposes of assessing support by the applicants for proposals in this proceeding. ICO Comments at 6-8; *see also* Comments, filed June 24, 1999, jointly by BT North America, Inc., Hughes Telecommunications and Space Company, Telecomunicaciones de Mexico, and TRW, Inc. (collectively, the AICO SPs≅), at 4 (AICO-SPs Comments≅).

41/ Celsat Comments at 14-17; Constellation Comments at 16-19; Globalstar Comments at 17-20; Inmarsat Comments at 10-11; MCHI Comments at 11-17; TMI Comments at 6-7.

42/ Celsat Comments at 14-15.

43/ Globalstar Comments at 18.

flexible band arrangement, there would also be a very real and debilitating uncertainty factor for all systems except the first few.≅[1/]

44/ *Id.* at 19. This debilitating uncertainty factor could be compounded if the Commission, in ET Docket 95-18, adopts ICO=s preferred approach for relocating incumbents. In such an event, the first entrant into the band would not only be able to delay the entry of later competitors through the coordination process, but could also impose greater relocation costs on them as well by using any available clear spectrum and leaving the remainder occupied by incumbents to be cleared by later MSS entrants.

Most noteworthy is the fact that Inmarsat B a chief beneficiary of negotiated entry in the licensing of past MSS services, and obviously the applicant with the most experience with post-licensing coordination, also opposes the Negotiated Entry approach, raising the very same concerns as those Iridium and others have advanced. Indeed, Inmarsat cites as an example of Athe complexities associated with implementing multiple MSS systems in an environment of limited spectrum availability≅ the Commission=s experience in the L-Band B the very proceeding ICO cites as support for the purported virtues of its preferred approach.[1/]

As Iridium stated in its Comments, the Negotiated Entry approach confers a decidedly anti-competitive advantage on one applicant B the first applicant to enter the band. ICO=s support for this approach is entirely self-serving. The approach would not enhance but instead would permanently impair the development of robust competition in the MSS services. Clearly, the Commission should reject this approach.

5. *Competitive Bidding*

45/ *Compare* Inmarsat Comments at 10 (citing *Notice of Proposed Rulemaking, In the Matter of Establishing Rules and Policies For the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-Band*, 11 FCC Rcd 11675 (1996)) *with* ICO Comments at 23 (International Coordination).

The parties with the greatest interests at stake in this proceeding, the applicants, virtually all reject use of competitive bidding (auctions) to award authorizations for 2 GHz MSS systems in the United States, demonstrating that this method of assigning licenses would run contrary to existing law and to the public interest. The applicants were supported by the Satellite Industry Association (ASIA≅). In its Comments, Iridium also described the uncertainties and financial risks that would result from the use of sequential auctions for international satellite spectrum licensing for 2 GHz MSS operators seeking to provide global services.[1/] The comments of other 2 GHz MSS applicants and SIA raised similar and additional concerns.[1/]

The only commenting party to advocate the use of auctions for 2 GHz MSS licensing in the U.S. is BellSouth Corporation (ABellSouth≅), neither an applicant nor an LOI filer but an existing user of 2 GHz spectrum. BellSouth advocates use of auctions (coupled with strict financial qualification requirements) ostensibly to ensure that 2 GHz MSS licensees will ultimately be able to perform their relocation payment obligations to Fixed Service (AFS≅) and Broadcast Auxiliary Service (ABAS≅) incumbents in the 2 GHz band.[1/]

46/ Iridium Comments at 22-26.

47/ Celsat Comments at 17-20, Constellation Comments at 6-7, Globalstar Comments at 12-14, ICO Comments at 11-14, Inmarsat Comments at 12, MCHI Comments at 17-18, TMI Comments at 8.

48/ Comments of BellSouth Corporation, filed June 24, 1999, at 2-8 (ABellSouth Comments≅).

Iridium finds it strange that BellSouth would advocate auction payments to the U.S. and other countries as a way of ensuring that its own 2 GHz relocation expenses will be reimbursed.[1/] Far from ensuring that a successful 2 GHz applicant will have the resources to meet its relocation obligations, BellSouth=s proposed auction framework would spawn an array of additional cost burdens, uncertainties, and financial risks on top of those that MSS system operators already confront that would make it less likely that they would have resources available when needed to reimburse incumbents.

More importantly, BellSouth is simply wrong when it attempts to portray the Commission=s position on auctions in the Notice as a sudden or abrupt departure from its existing policy.[1/] Citing the *Big LEO Report and Order*, BellSouth contends that the Commission rejected the concerns about A[t]he specter of <coordinated multinational auctions=≅ and the Asubstantial delay in service to U.S. customers≅ that such auctions could engender as far back as 1994, and asks Awhat has changed since 1994 that justifies a different conclusion≅ now.[1/]

To answer BellSouth=s query, several things have changed. First, as Iridium noted in its Comments,[1/] the Commission had occasion to revisit the suitability of auctions for purposes of satellite licensing two years later in its *Notice of Proposed Rulemaking* in the Little LEO

49/ Iridium and other parties have already demonstrated how the uncertainty and financial risks created by the use of auctions for the licensing of global satellite services would impair 2 GHz MSS applicants= ability to secure financing and drive away investors. One effect of this would almost certainly be to reduce the pool of ultimate licensees, thereby commensurately increasing the pro rata share of relocation expenses that each MSS licensees would be required to bear.

50/ *See* BellSouth Comments at 4-5.

51/ *Id.* at 5.

52/ Iridium Comments at 24-25.

proceeding and, at that time, recognized the problems created by the uncertainties that such auctions would engender.[1/] The Commission ultimately rejected the use of auctions in the Little LEO proceeding, just as it has proposed to do here.

Second, since 1994, both chambers of Congress have gone on record opposing the use of competitive bidding for assigning global satellite spectrum both in the U.S. and abroad. In fact, only four weeks ago, on July 1, 1999, the U.S. Senate passed S.376, the *Open-market Reorganization for the Betterment of International Telecommunications Act*. Section 633 of S.376 expressly provides that:

53/ *In the Matter of Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service*, 11 FCC Rcd 19841, 19869 && 80-81 (1996) (Notice of Proposed Rulemaking in IB Docket No. 96-220) (A*NVNG NPRM*≅).

> Notwithstanding any other provision of law, the Commission shall not assign by competitive bidding orbital locations or spectrum used for the provision of international or global satellite communications services. The President shall oppose in the International Telecommunications [sic] Union and in other bilateral and multilateral fora any assignment by competitive bidding of orbital locations of spectrum used for the provision of such services.[1/]

Moreover, just last year, the House of Representatives expressed the same sentiment in identical terms in H.R.1872.[1/] The Committee Report for that measure stated that:

> [t]he Committee believes that auctions of spectrum or orbital locations could threaten the viability and availability of global and international satellite services, particularly because concurrent or successive spectrum auctions in the numerous countries in which U.S.-owned global satellite service providers seek downlink or service provision licenses could place significant financial burdens on providers of such services. This problem could be compounded by the fact that the multi-year period required for the design, construction and launch of global and international satellite systems usually requires service providers to invest substantial resources well before they obtain all needed worldwide licenses and spectrum assignments. The uncertainty created by spectrum auctions could disrupt the availability of capital for such projects, and significantly reduce the available benefits offered by global and international satellite systems.[1/]

Finally, as the preponderance of comments plainly demonstrates, the Commission=s existing statutory mandate precludes adoption of competitive bidding as a licensing option in this proceeding. Thus, the Commission should reject BellSouth=s proposal and adopt the

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54/ S. 376, 106th Cong., 1st Sess. э 633 (1999).

55/ H.R. 1872, 105th Cong., 2nd Sess. э 649 (1998).

56/ H.R. REP. NO. 494, 105th Cong., 2d Sess. 64-65 (1998).

Commission=s tentative conclusion not to employ auctions to license 2 GHz MSS systems in the United States.

3. IMPLEMENTATION MILESTONE REQUIREMENTS

Iridium took no position in its Comments with respect to the issue of financial qualifications. The majority of 2 GHz MSS applicants, however, strongly support the Commission=s tentative conclusion not to impose such a qualifications standard on 2 GHz MSS applicants.[1/] These commenters reflect a consensus that implementation milestone requirements B firmly enforced B would provide adequate protections against spectrum lying fallow.

By contrast, only Boeing expresses a contrary view, contending that failure to adopt financial qualifications standards could jeopardize the rapid deployment of 2 GHz MSS service, unnecessarily tie up spectrum for years in international coordination proceedings, and facilitate

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57/ Celsat Comments at 20-23, Constellation Comments at 3-4, Globalstar Comments at 6-8, ICO Comments at 5-6, ICO-SPs Comments at 38, Inmarsat at 15-16, MCHI Comments at 22.

warehousing of spectrum.[1/] Specifically, Boeing urges the Commission to impose on 2 GHz MSS applicants the same financial qualification requirements imposed[1/] on Big LEO applicants.[1/]

58/ *See generally* Boeing Comments at 27-33.

59/ It should be noted that MCHI, in which Boeing is an investor, was not required ultimately to meet any financial requirements with respect to its Big LEO system. Indeed, both MCHI and Constellation were held to be financially unqualified but were issued licenses nonetheless.

60/ *Id.* at 33; *see also Amendment of the Commission=s Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, 9 FCC Rcd 5936, 5948 (1994) (A*Big LEO Report and Order*≅).

In the past, Iridium has supported financial qualifications as an appropriate safeguard to assure the productive use of spectrum.[1/] However, Iridium is persuaded by the weight of the comments that, under the specific circumstances at issue in this proceeding, financial qualifications requirements are not necessary. In fact, it would be difficult, if not impossible, given the uncertainty of the magnitude of relocation expenses, for an applicant to arrive at a realistic projection of costs, without which a financial showing would be incomplete and inaccurate.

61/ *See*, *e.g.*, Consolidated Comments and Petition to Deny of Iridium LLC, filed May 4, 1998, in FCC File Nos. 179-SAT-P/LA-97(16), *et al.*, at 10-11; Consolidated Reply of Iridium LLC, filed June 18, 1998, in FCC File Nos. 179-SAT-P/LA-97(16), *et al.*, at 11-12.

Iridium thus agrees with Globalstar and ICO, which each advocate strenuous implementation milestone performance standards as an alternative to financial qualifications requirements.[1/] Globalstar observes that, A[a]lthough well intended, [the Commission=s proposed] milestones do not sufficiently track the progress of a satellite system and cannot readily identify systems that are unlikely to become operational.≅[1/] ATo improve on the monitoring of systems,≅ Globalstar proposes that the Commission adopt as part of its milestones proposal the five-year implementation milestone plan adopted by the Conference of European Postal and Telecommunications Administrations (the ACEPT≅) for the Big LEO and 2 GHz MSS services.[1/] This seems reasonable, and Iridium does not disagree with Globalstar=s proposal; however, it must be recognized and understood that the ability of U.S. 2 GHz MSS licensees to meet such a five-year timetable will depend in large measure on the schedule that the Commission adopts in ET Docket No. 95-18 for relocating incumbent licensees from the band.

When the CEPT established its milestone schedule, it was doing so for spectrum that was already available (1.6/2.4 GHz) or that was to be cleared before MSS entry (half of global 2 GHz MSS bands), unlike the U.S. 2 GHz MSS band. If the Commission adopts the Traditional Band Plan and the relocation framework advocated by Iridium B clearance of the band by a date certain no later than three years from the date on which the Commission grants licenses to MSS operators to operate in the band B the CEPT five-year timetable should be achievable. By contrast, if the Commission adopts ICO=s preferred method of phased relocation of incumbents,

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62/ *See* Globalstar Comments at 35-40, ICO Comments at 17-18.

63/ Globalstar Comments at 36.

64/ *See id.* at 37.

it is not at all apparent that even a highly motivated licensee would be able to clear its spectrum in sufficient time to enable it to commence service within 60 months of receiving its authorization. Similarly, if the Commission adopts the Negotiated Entry or Flexible Band Plan approach and the ICO phased relocation plan, it is quite likely that only the first system to be constructed could ever meet the five-year milestones.

Whatever milestones are adopted, the Commission must apply and enforce its milestone requirements in an equitable manner. Thus, as Iridium stated in its Comments, milestone calendars should commence concurrently for both applicants and LOI filers. Because Iridium agrees with the Commission that milestone schedules should also commence on the service link grant date rather than the feeder link grant date, Iridium urges the Commission to reject Boeing=s proposal to defer commencement of milestone schedules until the Commission completes action on an applicant=s feeder link assignments.[1/]

For the same reasons, Iridium urges the Commission to reject Constellation=s proposal that the Commission adopt a Aflexible≅ milestone framework.[1/] The Commission should not permit the 2 GHz service rules process to be used as a pretext to relieve Big LEO licensees of their existing milestone obligations B or to permit them to warehouse spectrum for a system that would serve as Afollow-on≅ to an already licensed system that itself has yet to be implemented. The Commission=s milestones should only be of sufficient flexibility to allow the Commission to take into consideration an event or process beyond the control of the licensee.[1/] Otherwise, they

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65/ Boeing Comments at 25-27.

66/ Constellation Comments at 25-26.

67/ *See* Iridium Comments at 37 & n.69.

should be strictly enforced. Both the Boeing and Constellation proposals run contrary to the very purpose that the milestones are intended to serve: ensuring that licensed systems are implemented and services delivered to the public as expeditiously as possible.

4. SERVICE RULES

1. Regulatory Treatment

As noted in its Comments, Iridium supports the Commission=s proposal to classify as non-common carriage the space segment component of 2 GHz MSS systems and the related gateway and TT&C earth stations used to support those systems.[1/] As indicated, the same legal principles that supported the Commission=s decision to forego common carrier regulation for Big LEO systems apply with equal force to 2 GHz MSS systems. All of the commenting parties that address this issue share the same view.[1/] Accordingly, the Commission should adopt its tentative conclusion.

2. System License and License Term

With respect to system license and license term issues, Iridium recommended that the Commission consider awarding licenses for a term longer than 10 years in order to accommodate more realistically the significant capital outlays that technologically-advanced MSS systems

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68/ *Id.* at 31.

69/ *See* Constellation Comments at 23-24, Globalstar Comments at 30-32, ICO Comments at 15-16, Inmarsat Comments at 16, TMI Comments at 9.

require and enable operators to recover that investment. Alternatively, Iridium urged the Commission, at a minimum, to adopt a renewal expectancy for 2 GHz MSS licensees.[1/]

70/ Iridium Comments at 33.

Several of the other applicants in this proceeding join in Iridium=s call for a longer license term. Boeing and Inmarsat both ask the Commission to extend the term to 15 years,[1/] while ICO requests a term of 12 years coupled with a renewal expectancy.[1/] Globalstar argues in favor of a 20-year license term.[1/] Virtually all of these commenters share Iridium=s view that such an extension is warranted, and indeed necessary, in order to attract the billions of dollars in investment necessary to support the time, labor, and expense involved in construction and launch of technologically-advanced MSS systems.[1/] Moreover, as Iridium observed, increasing the initial term of the license is simpler and less administratively burdensome than the policy of liberally granting *ad hoc* extensions that the Notice appears to contemplate.

The Commission clearly possesses the authority to award licenses to 2 GHz MSS operators for a term longer than ten years. The record furnished by the commenters provides a sound policy basis for the Commission to exercise that authority. Accordingly, Iridium renews its request that the Commission adopt a license term for 2 GHz MSS licensees in excess of 10 years and adopt a renewal expectancy for these systems.

3. Enhanced 9-1-1 and Related Issues

71/ Boeing Comments at 37-38, Inmarsat Comments at 16-17 (requesting a term of 15 years or the actual lifetime of the satellite on a case-by-case basis).

72/ ICO Comments at 16, 23-24.

73/ Globalstar Comments at iii, 32-35.

74/ *See* Globalstar Comments at 33, ICO Comments at 16. Iridium supports Globalstar=s proposal that the Commission modify for 2 GHz MSS the language used in operators= blanket satellite licenses to permit operators to launch replacement satellites that are not Atechnically identical≅ to the initial space stations deployed. Globalstar Comments at 35. This proposal is consistent with Globalstar=s observation that a longer license term could encourage technical innovation as operators seek increasingly efficient ways to use spectrum with replacement satellites. *Id.* at 33.

In response to the Commission=s inquiry, the 2 GHz MSS applicants generally took the position that the Commission should not adopt enhanced 9-1-1 (AE911") and related safety and distress service requirements, including specific position location capabilities for 2 GHz MSS systems.[1/] In contrast, several other commenters urged the Commission to adopt such requirements, failing to appreciate the difficult technical and logistical problems that would first have to be overcome.[1/]

75/ *See* Constellation Comments at 26-27, Globalstar Comments at 41-44; ICO-SPs Comments at 42-44; TMI Comments at 10-11; *see also* Comments of the Satellite Industry Association, filed June 24, 1999, at 2 (ASIA Comments≅). *But see* Celsat Comments at 28-30.

76/ *See* Comments of APCO [Association of Public-Safety Communications Officials-International, Inc.], filed June 24, 1999, at 2-3 (AAPCO Comments≅), Comments of the National Telecommunications and Information Administration, filed June 24, 1999, at 15-17 (ANTIA Comments≅), Comments of the United States Coast Guard, filed June 24, 1999, at 4-6 (AUSCG Comments≅); *see also* Celsat Comments at 28-30.

As Iridium observed in its Comments, the Commission has specifically refrained from imposing on MSS providers caller identification, standardized position information, and automatic routing requirements for distress and safety or disaster response communications B first in establishing the Big LEO service,[1/] and again, in its E911 proceeding.[1/] It has done so out of the recognition that: (1) MSS providers= system architecture and the international nature of MSS service present unique technical, operational and legal issues that impact MSS operators= ability to provide these safety and distress functions; (2) no international standards exist; and (3) the adoption of MSS E911 requirements is premature.[1/]

77/ *Big LEO Report and Order*, 9 FCC Rcd 5936 at 6012-13.

78/ *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 11 FCC Rcd 18676 (1996) (AE911 Order≅).

79/ In 1996, in the E911 Order, the Commission specifically recognized that:

> . . . adding specific [emergency calling] regulatory requirements to MSS may impede the development of the service in ways that might reduce its ability to meet public safety needs. For example, coordination with international standards bodies will be necessary for international calls, and the current state of technology requires more obstacles to be overcome in the case of MSS carriers than for terrestrial carriers. . . . [W]e do not adopt schedules or other requirements for them here. The carriers and other interested parties are urged to develop emergency access systems as soon as is feasible to speed eventual implementation of effective emergency access and to minimize the costs of re-engineering facilities.

Id. at 18718.

As recently as late 1997, the Commission reiterated and confirmed this conclusion, stating that:

> The commercial MSS industry is still in its infancy. . . . [I]t is our policy . . . not to impose specific regulatory requirements on certain classes of CMRS providers that have not yet fully developed their commercial services. . . . [W]e might revisit our decision if these various services develop into a mobile public telephone service like cellular or broadband PCS.
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> [E]mergency service requirements for global MSS systems should be developed in an international forum to take into account compatibility and consistency with international standards, and to avoid burdening United States MSS licensees with a patchwork of different requirements. . . . We will revisit this issue if the MSS industry develops into a commercial mobile telephone service similar to cellular and broadband PCS, and still does not provide reliable public safety access to MSS customers.[1/]

80/ *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 12 FCC Rcd 22665, 22707, 22708 (emphasis added).

In its Comments, Iridium observed that these conclusions remain equally true today, and, thus, it remains premature to require that MSS terminals provide E911 and related capabilities.[1/] With only one exception, Celsat, the other 2 GHz MSS applicants and their affiliates expressed similar concerns.[1/] Constellation, for example, taking note of MSS operators= nationwide service footprint, observed that Ait does not appear that the relevant safety authorities have developed a nationwide plan to insure that there is a responsible agency for every point within the country, or a method for recovering the costs of a satellite provided service on a national basis.≅[1/] Globalstar also noted the problem MSS operators would confront in identifying an appropriate public safety

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81/ Iridium Comments at 40.

82/ *See* Constellation Comments at 26-27 (no nationwide plan for routing calls from remote areas or for recovering the costs of a satellite provided service on a national basis); Globalstar Comments at 41-44; ICO-SPs Comments at 42-44; TMI Comments at 10-11; SIA Comments at 2. The lone MSS provider to support imposition of such requirements is Celsat. *See* Celsat Comments at 28-30. However, it should be observed that Celsat, unlike the majority of other applicants with proposals pending in this proceeding, proposes only a regional service and, thus, need not contend with the problem of harmonizing such requirements with a global service.

For the reasons discussed in Iridium=s Comments, Iridium disagrees with Celsat=s assertion that E911 requirements are Afully consistent with the technological capabilities of MSS systems,≅ Celsat Comments at 30; however, Iridium does agrees with Celsat=s apparent general position that, if such requirements are adopted, Aall 2 GHz MSS applicants [should be required to] provide such services regardless of their stage of development or whether they are designed to complement terrestrial systems.≅ *Id.* at 30. The Commission must apply any such material service requirements to all authorized systems on a uniform basis to avoid conferring an unfair competitive advantage on some operators at the expense of others. Indeed, noting the Commission=s questionable authority to impose such expensive and burdensome requirements on systems for which it does not award space segment licenses (*i.e.*, the LOI filers), Iridium cautioned the Commission that it should consider the potential competitive detrimental impact that imposition of such obligations would have on the design and operations of U.S.-licensed MSS systems relative to their non-U.S.-licensed competitors that do not face such requirements. Iridium Comments at 41.

83/ Constellation Comments at 27.

answering point (APSAP≅) to which to refer an E911 call from a subscriber located in certain remote areas and the additional problems created by the fact that many of an MSS system=s subscribers will be originating calls from outside the United States where no international 911 designation presently exists.[1/]

84/ Globalstar Comments at 42-43.

The weight of the comments clearly demonstrates that it would be premature and inappropriate to burden MSS operators with obligations to provide services that may not be technically achievable or legally appropriate for all MSS providers. Rather, the Commission should encourage the industry to work together and with the international community to establish global emergency calling standards that are technically achievable and address the variety of international legal issues and restrictions that have been developed for emergency calling. Only when such standards are in place can the Commission appropriately undertake a proceeding to adopt such requirements for MSS operators.[1/]

4. Service to Unserved Communities

While strongly supporting the Commission=s policy to encourage delivery of cost-effective telecommunications services to persons in unserved, underserved, rural, or economically isolated areas, Iridium, in its Comments, nevertheless urged the Commission not to base any significant or substantive 2 GHz MSS rules or policies on an individual service provider=s pledge to serve such populations.[1/] Specifically, Iridium observed that virtually all of the 2 GHz MSS space system operators licensed in this proceeding will be capable of providing service to such

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85/ ICO urges only that first generation 2 GHz MSS systems not be required to provide E911 or other safety and distress services ostensibly to put new MSS systems on a competitive par with existing Big LEO MSS systems. ICO Comments at 19. By contrast, Boeing suggests that its proposed service is distinguishable from other 2 GHz MSS service proposals and should not be subject to any E911 or distress and safety services Aunless the inclusion of such services is appropriate.≅ Boeing Comments at 19. Iridium has already explained why it is premature to impose such requirements on any 2 GHz MSS systems, whether first or second generation. Iridium Comments at 38-41. However, as previously noted, if the Commission nevertheless decides to impose such requirements, fairness and competitive neutrality compel the Commission to apply them uniformly to all entities authorized to provide 2 GHz MSS service in the United States.

86/ Iridium Comments at 41-43.

remote populations simply by virtue of the ubiquitous coverage that is the hallmark of satellite service.

Because all 2 GHz MSS space segment licensees will be capable of providing service to unserved and underserved populations, Iridium noted, it would be inappropriate for the Commission to use this consideration as a criterion for resolving expansion band coordination disputes under the Flexible Band Plan approach[1/] or as a basis to relieve space segment licensees of their milestone obligations. This is particularly true because the entity offering service in the U.S. is the domestic service provider -- not the space station licensee.[1/] The other 2 GHz MSS applicants articulated similar views.[1/]

Iridium generally supports the proposals of some commenters to create incentives for service providers or earth segment operators. For example, the suggestion of several commenters that the Commission use the Universal Service Fund to provide cost supports to make MSS

87/ *Id.* at 42. As Commissioner Powell observed, such a policy would essentially create an ill-advised new comparative criterion for distinguishing between applicants. For these reasons, the Commission should reject Celsat=s proposal that delivery of service to unserved and underserved areas constitutes grounds for a preference to access to expansion spectrum. *See* Celsat Comments at 29.

88/ Moreover, as observed above in the discussion of the Commission=s Flexible Band Plan proposal, the grant of such expansion band access as an incentive to further a narrow domestic policy goal is unlikely to persuade a foreign administration to grant a commensurate increase in spectrum to the licensee in another country. Indeed, it could serve as an invitation to foreign administrations also to begin exacting similar domestic policy demands in exchange for spectrum access in their countries, thus subjecting U.S. licensees to an array of burdensome costs and potentially incompatible requirements that may be largely or even wholly unrelated to the quality or characteristics of MSS service.

89/ *See* Constellation Comments at 27-28, Globalstar Comments at 44-46, ICO Comments at 20; *see also* ICO-SPs Comments at 44-46.

service affordable for underserved populations while keeping it economically sustainable for the service provider seems sensible.[1/]

5. Trafficking

90/ *See* Globalstar Comments at 44-45, SIA Comments at 2-3, MCHI Comments at 26-27.

In its Comments, Iridium supported adoption of an anti-trafficking rule for 2 GHz MSS operators similar to that now applicable to Big LEO operators but only in the event that the Commission determines that such a rule could be applied with equal force and effect to non-U.S. licensed systems as well as to those licensed by the Commission.[1/]

Only two other commenters B both of them LOI filers B addressed the trafficking question.[1/] ICO appears to validate the Commission=s concern relative to the harmful potential of applicants that seek spectrum only for the purpose of speculation rather than to provide service to the public.[1/] However, ICO suggests that the Commission need not adopt the rule if it adopts a Negotiated Entry band plan approach.[1/] TMI does not object to an anti-trafficking rule[1/] and appears to concede that the Commission does possess the jurisdiction, pursuant to its authority to license foreign operators to serve the United States, to impose conditions on the sale of such non-U.S. licensed systems.[1/]

91/ Iridium Comments at 43.

92/ ICO Comments at 21, TMI Comments at 11.

93/ ICO Comments at 21.

94/ *Id.*

95/ TMI Comments at 11.

96/ *Id.*

In light of this record, and the important contribution such a rule could make in preventing the waste or warehousing of spectrum, Iridium renews its request that the Commission adopt for all 2 GHz MSS systems authorized to serve the U.S. an anti-trafficking rule similar to that now applied to Big LEO licensees. In addition, Iridium also reiterates its recommendation that the Commission condition the respective authorizations of Inmarsat and its affiliate ICO to prohibit the former from transferring any of its spectrum to the latter, by any means, unless the Commission first determines (1) that all global MSS systems not affiliated with either ICO or Inmarsat have received equitable access to spectrum in the foreign markets served by either of these entities, and (2) that the transfer serves the public interest.[1/] Collectively, Inmarsat and its affiliate ICO control the vast majority of MSS spectrum available globally today. Given the degree of common control that exists between Inmarsat and ICO, there is a real danger that the two affiliated entities will combine resources to the detriment of competition in the U.S. and globally.

97/ Iridium Comments at 43.

6. Exclusionary Arrangements

The Commission=s proposal to extend to the 2 GHz MSS service its existing rule prohibiting U.S. satellite licensees from entering into exclusive service arrangements with foreign administrations drew generally strong support from commenters.[1/] However, ICO opined that formal promulgation of such a rule is unnecessary because, ICO argued, the WTO Agreement on Basic Telecommunications Services and the FCC=s *Report and Order* in IB Docket No. 96-111 (the ADISCO II≅ proceeding)[1/] already embrace such requirements.[1/]

98/ *See* Boeing Comments at 35, Globalstar Comments at 41, Inmarsat Comments at 18, MCHI Comments at 27.

99/ *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, 12 FCC Rcd 24094 (1997) (*Report and Order* in IB Docket No. 96111, CC Docket No. 93-23, RM-7931, and File No. ISP-92-007) ["*DISCO II Report and Order*"].

100/ ICO Comments at 22.

In its Comments, Iridium supported the Commission=s proposal concerning exclusionary agreements and specifically advocated modification of the rule to bring non-U.S. licensed operators such as ICO within its scope.[1/] MCHI also urged the Commission to adopt a rule covering LOI filers as well as U.S. licensees.[1/] As these comments reflect, the Commission=s DISCO II decision does address this issue. Nevertheless, Iridium believes that a formal rule, backed by appropriate administrative enforcement powers, would meaningfully strengthen the legal framework protecting free global commerce in telecommunications services. Notwithstanding the obligations that may bind WTO member countries, the Commission should adopt a rule (as it has in other services) that is binding on licensees and others authorized to serve the U.S. The ability of a licensee, disadvantaged by another operator=s anti-competitive relationship with a foreign administration, to seek redress from the Commission against the offending operator is likely to be more effective at preventing such conduct in the long run.

5. MOBILE EARTH STATION LICENSING

Iridium supported the Commission=s proposal to license 2 GHz MSS mobile earth stations in the same manner as it presently licenses earth terminals for Big LEO systems.[1/] In addition, Iridium noted that it is a signatory to the GMPCS-MoU and supports the Commission=s proposal in IB Docket No. 99-67 to continue to use blanket licensing for GMPCS earth terminals.[1/]

101/ Iridium Comments at 45-46.

102/ MCHI Comments at 27.

103/ Iridium Comments at 46-47.

104/ *Id.* at 47. *See also* Reply Comments, filed July 21, 1999, by Iridium LLC, in IB Docket No. 99-67, RM No. 9165 (*Amendment of Parts 2 and 25 to Implement the Global*

Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements, et al.) at 7-8.

The majority of applicants= comments also support the Commission=s proposals. Globalstar, for example, supports adoption of the Big LEO rules for licensing mobile earth terminals as they may be modified in the GMPCS proceeding.[1/] Constellation, ICO, and Inmarsat do the same.[1/] In light of this support, the Commission should adopt its proposal to authorize 2 GHz MSS mobile earth terminals using blanket licenses.

6. INTERSERVICE SHARING

In its Comments, Iridium noted its agreement with the Commission=s expressed intention to resolve any remaining issues concerning the relationship between incumbent licensees in the 2 GHz band and the MSS operators that will soon displace them within the context of ET Docket No. 95-18.[1/] Iridium briefly reiterated its support in that proceeding for an incumbent relocation

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105/ Globalstar Comments at 41.

106/ Constellation Comments at 29, ICO Comments at 22-23, Inmarsat Comments at 17. TMI also stated its support for the blanket licensing of 2 GHz MSS earth station components operating in the U.S., although it hastened to observe that not all networks would necessarily be GMPCS compliant and, therefore, the Commission should not mandate such compliance. TMI Comments at 11. Iridium incorporates herein by reference the Comments and Reply Comments that it recently filed in IB Docket No. 99-67.

107/ Iridium Comments at 52.

plan that would relocate all FS and BAS incumbents out of the band as of a date certain prior to the commencement of any 2 GHz MSS operations in the band.[1/]

To the extent that these relocation and sharing measures are relevant to the issues in this proceeding, Iridium cautioned the Commission to exercise care that the framework it adopts to address them in ET Docket No. 95-18 is competitively neutral. Iridium believes that the framework it proposed in that proceeding meets the test of competitive neutrality and, moreover, provides a valuable degree of certainty both for incumbents seeking reimbursement and for MSS operators seeking clear spectrum. Iridium=s proposals are a matter of record and need not be repeated here.

108/ *Id.* As discussed above, the relocation schedule also affects the implementation milestones.

With respect to the question of out-of-band emissions limits, Iridium expressed support for the Commission=s proposal to apply the domestic emission limits of Section 25.202(f) to all 2 GHz MSS systems operating in the United States but disagreed with what it understood to be the Commission=s proposal to establish within Section 25.216 new limits (including interim limits) on out-of-band emissions for terminals operating in the 1610-1660.5 MHz band.[1/] Relative to the first issue, there seems to be general support for the Commission=s proposal. Boeing affirmatively supported the application of Section 25.202(f), and Globalstar indicated that it had no objection to the proposal, although it asserted that the better practice would be to adopt the more universal standards specified by ETSI and the ITU for 2 GHz MSS.[1/] For the reasons stated in its Comments, Iridium continues to object to the adoption of any interim standards on emissions limits for MSS terminals.

7. FEEDER LINK ISSUES

Iridium limited its Comments to issues relevant to its proposal to use frequencies in the Ka band for its MSS feeder links. In their comments, several parties have raised concerns generally directed to feeder links in this band or specifically directed at Iridium=s proposal. In addition, other comments relative to the use of the lower Ku-Band for feeder downlinks advocated certain proposals carrying more far-reaching policy implications potentially affecting Iridium and other satellite operators.

1. Iridium=s Feeder Link Operations

109/ Iridium Comments at 53.

110/ *See* Boeing Comments at 38, Globalstar Comments at 48-50.

In its Comments, the Personal Communications Industry Association (APCIA≅) addresses the use by MSS operators of portions of the Ka-Band allocated for use by LMDS, including the 29.1-29.25 GHz portion requested for Iridium=s feeder uplinks.[1/] PCIA concedes that NGSO MSS systems are allocated to operate on a co-primary basis with LMDS operations in this band and that LMDS operators= activities are restricted to hub-to-subscriber communications, but it nevertheless asserts that the FCC should take all necessary steps not to expand rights of satellite carriers in these bands so as not to impede LMDS operators= ability to make effective technical and business use of the band.[1/]

Iridium believes that PCIA=s concerns are misplaced. The Commission has not proposed in this proceeding to expand the rights of MSS operators in this segment of the band. Iridium will conduct its operations consistent with the Commission=s rules and existing allocations. Iridium expects LMDS operators to do the same. As PCIA concedes, LMDS operations are restricted in this band, and the Commission should not take steps in this proceeding to expand the rights of LMDS operators at the expense of MSS licensees.

111/ Comments of the Personal Communications Industry Association, filed June 24, 1999, at 1 (APCIA Comments≅). Bosch Telecom, Inc. (ABosch≅) also submitted comments concerning MSS use of portions of the Ka-Band allocated for LMDS use; however, Bosch=s comments were limited only to the 27.5-28.35 GHz section of the band. Comments of Bosch Telecom, Inc., filed June 24, 1999, at 1.

112/ PCIA Comments at 3, 4.

The Fixed Wireless Communications Coalition (AFWCC≅) also advances some general concerns relative to MSS feeder links in bands currently occupied by FS operators.[1/] The FWCC states that the Commission must constrain deployment and design of MSS feeder link earth stations to protect FS operations already confronting a scarcity of spectrum.[1/] Specifically, FWCC proposes that the Commission: (1) limit the total number of feeder link earth stations; (2) perhaps require various MSS providers to collocate their feeder link earth stations; (3) site feeder link earth stations away from population centers; (4) require use of the largest feasible antenna; (5) shield feeder link earth stations (or use Avirtual shielding≅); and (6) set standards for earth station spectrum efficiency of at least 16 QAM or 4 bits/second/hertz.[1/]

The Commission need not and should not take any action on these recommendations in this proceeding to adopt service rules and policies for 2 GHz MSS. Spectrum coordination and sharing can be, and indeed has been, effectively handled in allocation proceedings involving feeder link frequencies as well as in private negotiations among the industries and individual operators. FWCC can raise these issues in the relevant allocation proceedings and its members can raise them in coordination negotiations.

113/ Comments of the Fixed Wireless Communications Coalition, filed June 24, 1999 (AFWCC Comments≅).

114/ *Id.* at 4.

115/ *Id.* at 4-5.

Two of the entities with an economic interest in this proceeding, Hughes Communications Galaxy, Inc., and Hughes Communications, Inc. (collectively, AHughes≅),[1/] reiterate their objection to the waiver request that Iridium submitted in connection with the feeder link proposal of its MACROCELL application.[1/] Iridium=s feeder link request was placed on public notice before Iridium=s MACROCELL application appeared on public notice.[1/] Hughes acknowledges that it previously filed a Petition to Deny the MACROCELL application yet demands the right to have another opportunity to comment further if the waiver request is resolved in a separate

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116/ It must be noted that Hughes is an investor and a Apartner≅ in ICO. *See* http://www.ico.com/about/ (identifying Hughes Network Systems, Inc., and Hughes Space and Communications International, Inc., as Partners in ICO, and Hughes Electronics (USA) as an Investor in ICO). Indeed, as the Commission is aware, Hughes is a member of the ICO-SPs group, *see* note 40, *supra*, that is also a commenting party in this proceeding.

117/ Joint Comments of Hughes Communications Galaxy, Inc., and Hughes Communications, Inc., filed June 24, 1999, at 3 (AHughes Comments≅).

118/ *See* Public Notice, *Satellite Policy Branch Information: Satellite Applications Accepted for Filing in the Ka-band*, Report No. SPB-106, 13 FCC Rcd 8020 (DA 97-2202, released October 15, 1997); *see also* Public Notice, *Satellite Policy Branch Information: Satellite Applications and Letters of Intent Accepted for Filing in the 2 GHz Band*, Report No. SPB-119 (released Mar. 19, 1998).

proceeding.[1/] Iridium cannot stop Hughes from littering the Commission with filings; however, there is no need to consider the Hughes Comments in this service rules proceeding.

119/ Hughes Comments at 3 & n.9.

Finally, Hughes= subsidiary PanAmSat submitted comments in support of the Commission=s proposal to dispose of Iridium=s, Celsat=s, and Globalstar=s feeder link requests within the context of a second Ka-Band processing round.[1/] In addition, PanAmSat asserts that the Commission should adhere to the Ka-Band plan and reject any application that deviates from it. Iridium disagrees that a processing round is needed to dispose of its feeder link application. As Iridium stated in its Comments:

> While it may be appropriate (indeed, even necessary) to address Celsat=s application in such a processing round because it proposes a variance from the Ka-Band plan that raises significant coordination issues relative to incumbent and applicant GSO FSS systems, the Iridium application presents no such difficulties. On the contrary, Iridium=s proposal is entirely consistent with the existing Ka-Band plan, and Iridium is only seeking to use spectrum that has already been allocated for NGSO MSS feeder links and, more specifically, much of which has already been licensed for use with the IRIDIUM[7] system. Iridium=s MACROCELL application creates no meaningful spectrum coordination issues whatsoever.
>
> If, however, the Commission believes that Iridium=s feeder link proposal must be considered in the second Ka-Band processing round, such consideration should be limited to the feeder link spectrum not already in use by the IRIDIUM[7] system. That spectrum has been coordinated with Motorola. Thus, the MACROCELL system application can be granted with the feeder link frequencies 19.4-19.6 GHz and 29.1-29.25 GHz unconditionally, with the

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120/ Hughes= third filing in this proceeding is filed by its subsidiary, PanAmSat. Comments of PanAmSat Corporation, filed June 24, 1999, at 5. It should be noted that PanAmSat is a subsidiary of Hughes, *see* http://www.hughes.com/, which, as previously noted, is an investor and a Apartner≅ in ICO.

additional frequencies granted conditionally, pending resolution of the second Ka-Band processing round.[1/]

2. Radio Astronomy Issues

121/ Iridium Comments at 28-29.

While they do not directly address Iridium=s proposed feeder links, the Comments filed by the National Academies= Committee on Radio Frequencies (ACORF≅) are of concern to Iridium.[1/] CORF=s Comments appear to be only addressed to protecting radio astronomy from interference resulting from out-of-band emissions emanating from Boeing=s and TMI=s proposed feeder downlinks in the lower Ku-Band. However, CORF=s comments advance proposals that, if adopted, could establish an unfavorable precedent with implications for satellite operations in other bands.

Specifically, CORF proposes that, if the Commission permits satellite feeder downlinks in the lower Ku-Band, it also should require those downlink operations to protect Radio Astronomy Service (ARAS≅) and Earth Exploration-Satellite Service (AEESS≅) observations from interference at the values set forth in ITU-R Recommendation 769-1,[1/] thus effectively making the recommendation the "definition" of harmful interference, and hence the required level of protection, for radio astronomy in the passive research bands (10.6-10.7 GHz), which are adjacent to the proposed feeder link bands (10.7-11.7 GHz). However, such establishment of a particular value as a definition for harmful interference is contrary to the long-standing U.S. policy of not quantifying harmful interference.

122/ Comments of the National Academies= Committee on Radio Frequencies, filed June 24, 1999 (ACORF Comments≅). *See also* NTIA Comments at 19-20.

123/ CORF Comments at 1.

Harmful interference is only decided on a case-by-case basis and the interference must "seriously degrade, obstruct or repeatedly interrupt" a radio communication service.[1/] In other words, it must happen in practice and cannot be simply specified on paper. In most cases, the ITU-R Recommendations only quantify Apermissible interference,≅ which should be construed by a satellite system designer as a minimum level of interference to expect and not a value that will never be exceeded. With respect to the Radio Astronomy Service, ITU-R Recommendation RA-769-1 addresses Adetrimental≅ interference.

Moreover, even assuming that U.S. policy did allow for the quantification of harmful interference, ITU-R Recommendation 769-1 would not provide an appropriate basis to define the necessary interference protection levels from MSS terminals. RA.769-1 does not even make a passing reference to NGSO satellites. Rather, it starts with the case of a terrestrial interferer, and calculates a value of detrimental interference, then it makes an extension of this value to derive another value for the case of satellites in geostationary orbit. The case of NGSO satellites is not considered.

CORF also calls for the Commission to specify in the Rules a requirement for MSS operators to use satellite filters that can provide at least 50 dB of suppression of out-of-band emissions.[1/] This would introduce yet another extremely dangerous precedent for the Commission by having it dictate to operators not only the standards that they must meet but also the method by which they must achieve them. It would be far more practical, and less intrusive, for the Commission to condition authorizations accordingly and then permit operators to protect radio astronomers from harmful interference in any way they see fit.

124/ Radio Regulations, No. S1.169 (Geneva, 1998).

125/ CORF Comments at 4.

8. AMS(R)S IN THE 2 GHz MSS BAND

The preponderance of comments filed in this proceeding support the position advocated by Iridium in its Comments with respect to Boeing=s proposal to provide AMS(R)S in the 2 GHz MSS bands. In its Comments, Boeing repeatedly asserts that a Acritical need≅ exists for the service it proposes to offer. Indeed, Boeing contends that the need for its proposed system is Aundisputed.≅[1/] However, the comments demonstrate that the contrary is true. In fact, the National Telecommunications and Information Administration (ANTIA≅) expressly contradicts Boeing=s contention, stating that no demonstrated need exists at present for AMS(R)S in the 2 GHz band.[1/]

126/ Boeing Comments at 7; *see also id.* at 2, 3.

127/ NTIA Comments at 18.

Celsat, Constellation, Globalstar, ICO, Inmarsat and TMI, all join Iridium in opposing accommodation of Boeing=s AMS(R)S proposal in the 2 GHz MSS band, generally raising concerns similar to those Iridium expressed in its Comments, *i.e.*, that no appropriate allocation exists to support Boeing=s proposed service and that Boeing=s proposal is inherently inconsistent with the objectives that the Commission sought to achieve when it reallocated sections of the 2 GHz band for generic MSS use in the first place.[1/] Globalstar adds that it would not object to Boeing=s proposal, provided that Boeing Aseeks no extraordinary protection for the service within the intrasystem coordination requirements that are adopted for the spectrum it shares with other licensees.≅[1/] Boeing contends that it will not require such special protections for its system, claiming that Apriority . . . . certainly is not necessary≅[1/] and that it does not need Ainter-network preemptive capabilities.≅[1/] If Boeing=s claims are in fact true, Iridium might be persuaded to concur with Globalstar. However, the record in this proceeding casts doubt on Boeing=s claims.

Boeing=s Comments fail to address adequately the concerns raised by others. Indeed, Boeing=s Comments concede that most of the necessary international standards and guidelines that would enable it to effectuate its proposal are not yet in place.[1/] Moreover, even ARINC, an apparent supporter of Boeing=s proposal acknowledges that:

128/ *See* Celsat Comments at 27-28, Constellation Comments at 4-5, Globalstar Comments at 4-6, ICO Comments at 5, Inmarsat Comments at 12-14, TMI Comments at 3.

129/ Globalstar Comments at 6. This is also TMI=s position. TMI Comments at 3.

130/ Boeing Comments at 5.

131/ *Id.* at 6.

132/ *Id.* at 7-13. In fact, Boeing concedes that most of the work that has been done to

> . . . aeronautical service by satellite is feasible, but changes in the current allocations will be necessary for the system fully to serve the public interest. Because of the international nature of aviation, amendments to the Table of Frequency Allocations of the International Telecommunication Union (ITU) will also be required. Also, Part 87 of the Rules will have to be amended to provide for licensing of airborne mobile earth terminals . . . if safety-of-flight service is involved.[1/]

Without such changes in international allocations and international standards, ARINC observes, Boeing=s Anew system would not likely achieve the consensus necessary to support carriage of the equipment.≅[1/]

Even more telling is ARINC=s later observation that:

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date to authorize AMS(R)S outside of its customary bands has been directed to the 1.5/1.6 GHz bands and is not directly applicable to the 2 GHz band. *Id.* at 8-9. Boeing also attempts to bolster its claim that its AMS(R)S should be authorized in the 2 GHz MSS band by relying on a recent ICAO decision approving the IRIDIUM[7] system for delivery of such services. *See id.* at 6. However, these proceedings involving the IRIDIUM[7] system are likewise inapposite. Unlike the present 2 GHz MSS spectrum that Boeing seeks to utilize, the L-Band spectrum which is the focus of Iridium=s efforts (1.6 GHz) already includes a specified allocation for AMS(R)S.

133/ ARINC Comments at 2 (emphasis added).

134/ *Id.* at 5.

> [t]he concept of priority and real-time preemptive access has been degraded since first proposed by the Federal Aviation Administration (FAA) and adopted by the FCC. . . . If AMS(R)S is to function in this [2 GHz MSS] spectrum, the band assignment plan should provide aviation with adequate exclusive spectrum or assurance that it would be able to preempt the spectrum of non-AMS(R)S systems to meet its communication requirements.[1/]

In its Comments, Iridium observed that Boeing=s proposal presents significant technical and national policy questions that, while deserving of close attention, are not suitable or appropriate for resolution in the instant proceeding.[1/] Iridium noted that these issues warrant attention in a separate inquiry; however, Iridium stated its opposition to operations, commercial or otherwise, in the bands assigned to the Global Positioning System (AGPS≅) that would compromise the integrity and accuracy of the GPS. Accordingly, Iridium urged the Commission to deny as well the radionavigation aspects of Boeing=s application. The comments appear to indicate that Boeing has not yet obtained the agreement of the relevant governmental bodies to its proposed use of the GPS L1 band.

135/ *Id.* at 4 (emphasis added).

136/ Iridium Comments at 30.

Boeing claims, for example, that it Ahas been able to assure government users of the band that Boeing=s [augmentation] service is fully compatible with existing systems.≅[1/] However, while Boeing may have made assurances, the comments suggest that the relevant government users have not yet been assured. Notably, NTIA states that Adetailed discussions≅ with Department of Defense (ADoD≅) and the Federal Aviation Administration (AFAA≅) would be necessary before it could concur with Boeing=s proposal to deliver Navigational Augmentation Service (ANAS≅) in the Radionavigation Satellite Service frequencies used by GPS.[1/]

At present, Boeing=s proposal is limited very narrowly to provision of aeronautical and navigational services. Iridium has understood from published reports and Boeing=s own filings that Boeing is not interested in providing general MSS services. As outlined in Iridium=s Comments and those of other 2 GHz MSS applicants, Boeing=s proposal, as presently formulated, is inconsistent with the purposes for which the Commission originally allocated 2 GHz spectrum for use by MSS. If Boeing chooses to modify its application to specify a broader range of MSS services consistent with the purposes of the Commission=s 2 GHz MSS allocation, then the Commission could consider accommodating it in this proceeding. Absent such a change, however, the Commission should reject Boeing=s and ARINC=s requests for an AMS(R)S

137/ Boeing Comments at 15.

138/ NTIA Comments at 18-19.

designation and adoption of related protections for the frequencies in the 2 GHz MSS band,[1/] and Boeing=s application should be dismissed.

9. CONCLUSION

Iridium demonstrated in its Comments that engineering solutions exist that enable the Commission to assign spectrum to all of the pending applicants in the 2 GHz MSS band and that the Traditional Band Plan represents the best method for effectuating that assignment. However, Iridium also stated that, under present conditions, the U.S. band assignment framework and licensing scheme for 2 GHz MSS systems will not suffice to ensure the healthy emergence of robust competition in the U.S. and globally. Iridium urged the Commission to work with European authorities and other countries to ensure that U.S. global MSS systems will not be frozen out of the 2 GHz band outside the U.S. and to ensure that all MSS systems have equitable access to spectrum. As the foregoing illustrates, the comments filed by the other applicants in this proceeding support Iridium=s position and echo the need for prompt and effective action by the Commission to secure accessibility of 2 GHz MSS spectrum worldwide.

The comments also lend further support to Iridium=s recommendations relative to the Commission=s proposed service rules and policies to govern 2 GHz MSS in the U.S., especially relative to the application of implementation milestones, license term, E911 requirements, and exclusionary arrangements. The Commission has the opportunity before it to implement a band plan and service rules that can foster healthy competition.

139/ *Id.* at 3.

Accordingly, for the reasons set forth in Iridium=s Comments and herein, Iridium respectfully urges the Commission to adopt the Traditional Band Plan and service rules for licensing 2 GHz MSS systems consistent with the views expressed herein.

Respectfully submitted,

IRIDIUM LLC

By: /s/ Eric T. Werner

Thomas J. Keller
Eric T. Werner
VERNER, LIIPFERT, BERNHARD,
MCPHERSON, AND HAND, CHARTERED
901 - 15th Street, N.W.
Suite 700
Washington, D.C. 20005-2301
(202) 371-6000

Counsel to Iridium LLC

Patricia A. Mahoney
Assistant General Counsel,
Regulatory and Trade Policy
Audrey L. Allison
Counsel, Regulatory Matters
IRIDIUM LLC
1575 Eye Street, N.W. - 8th Floor
Washington, D.C. 20005
(202) 408-3800

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